S/N 09/699,624 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	GOLDSTEIN et al.	Examiner:	Shawn S. An
Serial No.:	09/699,624	Group Art Unit:	2613
Filed:	October 30, 2000	Docket No.:	12808.0007USI1
Title:	OPTICAL DEVICE		

CERTIFICATE UNDER 37 CFR 1.6(d):
I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on May 1, 2006.
By:
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APPELLANT'S BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

23552
PATENT TRADEMARK OFFICE

Sir:

This Brief is presented in support of the Appeal filed November 1, 2005, from the final rejection of Claims 1-4, 6, 7, 10-17, 20 and 21 of the above-identified application, as set forth in the Office Action mailed May 2, 2005.

A check for $250.00 to cover the required fee for a small entity is enclosed.

An oral hearing is requested. A separate request for oral hearing with the appropriate fee will be filed within two months of the Examiner's Answer.

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I. REAL PARTY OF INTEREST

The real party of interest is VISIONSENSE LTD., by way of Assignment, recorded on April 8, 2003 at Reel 013568 and Frame 0960.

II. RELATED APPEALS AND INTERFERENCES

An appeal is copending in U.S. Patent Application Serial No. 10/364,053, also assigned to VISIONSENSE LTD.

III. STATUS OF CLAIMS

Claims 1-3, 6-7, 10-17 and 20-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Street, U.S. Patent No. 6,075,555 in view of Watanabe, U.S. Patent No. 5,812,187 and Kitajima, U.S. Patent No. 5,865,829. Claims 5, 8-9 and 18-19 have been cancelled.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Street, U.S. Patent No. 6,075,555 in view of Watanabe, U.S. Patent No. 5,812,187 and further in view of Pourcelot et al., U.S. Patent No. 4,605,009.

IV. STATUS OF AMENDMENTS

No amendments have been filed after the Office Action dated May 2, 2005.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Claim 1 is directed to a stereoscopic device comprising at least two apertures, each of said apertures including a light valve, each of said light valves being operative to open at a different, predetermined time. Two apertures are shown in Figures 20A, 20B, 21A, 21B, 23 and 24. The apertures are represented by multiple aperture 804 including two apertures 802L and 802R. This is described in the present application on page 33, lines 13 - 15 and page 34, lines 14 - 18.

The stereoscopic device of claim 1 is also directed to a multi wavelength light sensor array as described on page 13, lines 15 - 27, as well as on page 15, lines 17 - 20. Light sensor array is also shown in Figure 2 as element 220 and described on page 16, lines 14 - 18, on page 17, lines 4 - 18 and on page 18, lines 9 - 12. A sensor array 330 is further disclosed in Figure 3 and on page 19, lines 8 - 16. Sensor array 520 is also described on page 23, line 29 - page 24, line 5 and shown in Figure 8.

A sensor array 608 is described on page 26, lines 20 - 26 and shown in Figures 12A and 12B and again on page 27, lines 4 - 9.

A sensor array is also shown in Figure 16 and described on page 30, line 18 - page 31, line 3.

In Figure 17, a sensor array is shown as 720 and described on page 31, lines 4 - 18.

A sensor array 740 is shown in Figure 18 and described on page 31, line 19 - page 32, line 8.

In Figure 19, a sensor array is shown as element 760 and described on page 32, lines 9 - 19.

Claim 1 also includes a controllable multi wavelength illumination unit illuminating a scene, said controllable multi wavelength illumination unit producing at least two separated alternating beams of light, each said beams of light characterized as being in a different range of

wavelengths. Light source 206 is shown in Figure 2 and described on page 15, line 26 and on page 17, lines 12 - 18.

Light source 506 is shown in Figure 8 and described on page 23, lines 22 - 24 and on page 24, lines 5 - 6. A light source is also shown as element 656 in Figures 14A and 14B, described on page 28, lines 20 - 29.

Light source 682 is shown in Figure 15 and described on page 30, lines 6 - 14.

The two separated alternating beams of light are produced by illumination unit 830 and shown in Figures 20A and 20B that emits light rays 832 of different colors, as described on page 35, lines 13 - 19 and page 36, lines 15 - 28 and again on page 38, lines 5 - 9.

Claim 1 further includes a controller connected to said light valves, said multi wavelength light sensor array and to said controllable multi wavelength elimination unit, the controller is represented by reference number 834 shown in Figures 20A and 20B and described on page 37, lines 1 - 7. The controller coordinates the timing and operation of the light valves, the controllable multi wavelength elimination unit and the multi wavelength light sensor array to detect a plurality of images so that each of the images from a single one of the light valves exhibits an open state and only one of at least two separated alternating beams of light illuminates the detected scene. This control and coordination is shown in Figure 21A, 21B, 23 and 24 and is described on page 36, line 15 - page 41, line 10.

Dependent claim 2 is directed to the multi wavelength light sensor array including at least two groups of sensors, where the sensors of each group detect light in a different range of wavelengths. This is described on page 15, lines 15-20 and shown in Figure 1. This is also shown in Figure 3A and described on page 18, lines 14-23, and shown in Figure 3C and described on page 19, lines 8-30. This is further shown in Figures 5A-5C and described on page 20, lines 12-28, and shown in Figure 6 and described on page 20, line 29- page 21, line 10.

Dependent claim 3 is directed to the multi-wavelength light sensor array including a plurality of sensors, the sensors each detecting light in a predetermined range of wavelengths.

This is described on page 15, lines 15-20 and shown in Figure 1. This is also shown in Figure 3A and described on page 18, lines 14-23, and shown in Figure 3C and described on page 19, lines 8-30. This is further shown in Figures 5A-5C and described on page 20, lines 12-28, and shown in Figure 6 and described on page 20, line 29- page 21, line 10.

Dependent claim 4 is directed to a controllable multi wavelength illumination unit surrounding the apertures. This is shown in Figures 14A and 14B and described on page 28, line 20 – page 29, line 23. This is also shown in Figure 15 and described on page 29, line 24 - page 30, 14.

Dependent claim 6 is directed to the controllable multi wavelength illumination unit. Claim 6 recites a multi wavelength light source, a light dispersing unit, and light guiding means connected between the multi wavelength light sources and the light dispersing unit, thereby guiding light from the multi wavelength light source to the light dispersing unit. This is shown in Figure 1 and described on page 13, lines 11-14.

Dependent claim 7 is directed to producing at least two separated alternating beams of light, each beam of light characterized as being in a different range of wavelengths. This is shown in Figures 14A and 14B and described on page 28, line 20 – page 29, line 23. This is also shown in Figure 15 and described on page 29, line 24 - page 30, 14.

Independent claim 20 is directed to a method for detecting a stereoscopic image. The claim recites providing light valves alternating between at least two apertures. This is shown as 802L and 802R in Figures 20A and 20B and described on page 53, lines 13-15 and page 34, lines 14-18. Claim 20 recites providing a controllable multi wavelength illumination unit shown as light source 206 in Figure 2 and described on page 15, line 26 and on page 17, lines 12-18. Illumination unit 830 is described on page 35, lines 3-19 and shown in Figures 20A and 20B. The illumination unit and the wavelength beams are also described on page 36, lines 15-28. This passage also describes the illumination beams and the different colors representing different wavelengths.

Claim 20 also recites controlling the operation of at least two apertures in the sequence of at least two separated illumination beams, such that for each said image, only a single one of the apertures exhibits an open state and only one of the at least two illumination beams illuminates the detected scene. The controller is shown as element 834 in Figures 20A and 20B. Moreover, the operational left and right apertures are shown in Figures 23-24. Description of this operation is found on page 34, line 14 - page 35, line 2. This is also described on page 39, line 20 through page 40, line 12. Finally, claim 20 includes providing a multi wavelength light sensor array detecting a plurality of frames controlling the timing of the operation of said light valves and coordinating the timing of said light valves with operation of said multi wavelength light sensor array and with operation of said controllable multi wavelength illumination unit to detect a plurality of frames for a combination including a selected open one of said apertures and at least a selected illuminating one of said beams. Light sensor array 102 is described on page 13, lines 15-27 as well as on page 15, lines 17-20. A light sensor array is also shown in Figure 2 as element 220 and described on page 16, lines 14-18 and page 17, lines 4-18, as well as on page 18, lines 8-13. A light sensor array 330 is further disclosed in Figure 3 and on page 19, lines 8-16. A sensor array 520 is also described on page 23, line 29 - page 24, line 5 and shown in Figure 8.

A sensor array 608 is described on page 26, lines 20-26 and shown in Figures 12A and 12B and is further described on page 27, lines 4-9. A light sensor array 700 is also shown in Figure 16 and described on page 30, line 18 - page 31, line 3. A light sensor array 720 is shown in Figure 17 and described on page 31, lines 4-18. A sensor array 740 is shown in Figure 18 and described on page 31, line 19 - page 32, line 8. Finally, as shown in Figure 19, a sensor array described as element 760 is shown on page 32, lines 9-19.

Controlling the timing and operation of the light valves and coordinating the timing of the operation of the light valves with the operation of the multi wavelength light sensor array, the operation of said controllable multi wavelength illumination unit to detect the plurality of frames for a combination including a selected open one of said apertures and at least a selected illuminating one of said beams is shown in Figures 20-24. In particular the synchronization and

coordination is discussed on page 36, line 19 - page 37, line 25 and shown in Figure 22 and described on page 38, line 1 - page 39, line 2. A method of controlling is also shown in Figures 20A, 20B and 21A and described on page 39, lines 3-16. Another method of controlling is shown in Figure 21B and 20A and described on page 39, line 20 - page 40, line 12. A further method is shown in Figure 23 and described on page 40, lines 13 - 29. Finally, a method of control is shown in Figures 20A, 20B and 24 and described on page 41, lines 1-10.

Dependent claim 21 is directed to reconstructing a stereoscopic image from the frames. This is shown in Figure 2 and described on page 17, line 20 – page 18, line 3.

VII. ARGUMENT

Rejection under 35 U.S.C. Section 103(a) over U.S. Patent No. 6,075,555 to Street in view of U.S. Patent No. 5812,187 to Watanabe and U.S. Patent No. 5,865,829 to Kitajima

Claims 1, 10, 11, 12, 13, 14, 15, 16, 17

Claims 1-3, 6-7, 10-17 and 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Street, U.S. Patent No. 6,075,555 in view of Watanabe, U.S. Patent No. 5,812,187 and Kitajima, U.S. Patent No. 5,865,829. The Office Action states that Street discloses a stereoscopic device with at least two apertures including a light valve being operative to open at a different predetermined timing. The Office Action also states that Street has a multi wavelength light sensor array for detecting a plurality of frames and an illuminating unit. The Action finally alleges that Street has a controller connected to the light valves and the multi wavelength light sensor array wherein the controller coordinates the timing and operation of the light valves with the multi wavelength light sensor array for detecting a plurality of images, so that for each of the plurality of images, only a single one of the light valves exhibits an open state. The Action states that Street does not disclose a controllable multi wavelength illuminating unit producing at least two separated alternating beams of light as being in a different range of wavelengths, and only one of the at least two separated alternating beams of light illuminating the detected scene.

Although not shown in Street, the Office Action contends that Watanabe teaches a conventional controllable multi wavelength illuminating unit producing at least two alternating beams of light as being in a different range of wavelengths wherein only one of the at least two alternating beams of light illuminates an object or a scene. The Office Action admits that Watanabe does not specifically produce at least two separated alternating beams of light. The Action contends that it is well known in the image capturing art for an illuminating unit to produce alternating beams of light either sequentially or separately. The Office Action states that Watanabe utilizes a sequential illuminating process.

The Action states that Kitajima teaches an optical apparatus comprising a light of at least two different wavelengths that may be projected onto the intraocular part of the patient using a single illumination optical fiber, which guides light from a plurality of light sources to a predetermined part.

The Office Action contends that it would have been obvious to one of ordinary skill in the art to use the stereoscopic device of Street to incorporate Watanabe's controllable multi wavelength illuminating unit with Kitajima, which teaches a multi wavelength illuminating unit so as to produce at least two separated alternating beams of light having a different range of wavelengths, wherein only one of the at least two alternating beams of light illuminates an object or a scene. The Action asserts that Street's controller would be able to coordinate the timing and the operation of the multi wavelength illuminating unit to detect a plurality of images so that for each of the plurality of images, only a single one of the light valves exhibits an open state, and wherein only one of the at least two separated alternating beams of light illuminates the detected scene for generating a more accurate color video signal, thereby significantly improving image quality. Applicants respectfully disagree with the characterization of the teaching of the cited references. Moreover, Applicants assert that such a combination goes beyond the abilities of one of ordinary skill in the art and that the combination is not obvious without use of hindsight, which is not permissible. Moreover, the references have different technologies that are not compatible and teach away from the present invention and combination.

Claim 1 is directed to a stereoscopic device with at least two apertures, each of said apertures including a light valve and each of said light valves being operative to open at a different predetermined timing. Claim 1 also includes a multi wavelength light sensor array and a controllable multi wavelength illumination unit illuminating a scene. The controllable multi wavelength illumination unit produces two separated alternating beams of light, each of said beams of light characterized as being in a different range of wavelengths. Claim 1 recites a controller connected to the light valves, the multi wavelength sensor array and to the controllable multi wavelength illumination unit to coordinate the timing and the operation of the light valves with said controllable multi wavelength illumination unit and with multi wavelength light sensor

array to detect a plurality of images. For each of the plurality of images, only a single one of the light valves exhibits an open state and only one of the at least two separated alternating beams of light illuminates the detected scene. The controller produces a stereoscopic color image by producing a right color image and a left color image.

Conversely, the cited art teaches away from the present invention. Kitajima operates on the premise of having a visible light source and infrared light source and both light sources are active at the same time and do not alternate. See column 11, lines 27-28 of the Kitajima reference. Claim 1 recites that only a single one of the light valves exhibits an open state wherein only one of the at least two separate alternating beams of light illuminates the detected scene. In addition to using a different technology for illumination, the Kitajima system includes a visible light camera and an infrared light camera to detect the light at the specific wavelength ranges. Therefore, light from both visible and infrared sources are detected by a different camera through the same aperture and associated light valve. Applicants therefore assert that Kitajima uses a totally different technology operating in a different manner. Katajima does not utilize the timing and coordination recited in claim 1 and would not and cannot utilize such technology with its different cameras and light sources. Kitajima teaches away from the device of claim 1 and teaches away from combination with Watanabe and/or Street.

Moreover, even if combined, Kitajima discloses a different system that separates light in the frequency domain but not in the time domain as none of the valves or light sources of Kitajima are coordinated from a timing perspective. Such a combination would include controlled light valves that operate simultaneously to control two cameras, one for each of the different types of light utilized.

The Office Action asserts that Street can control and coordinate the operation of the system as recited in claim 1. Applicants assert that Street only discloses a system that provides a stereoscopic image using a single charge coupled device, with a simple controller that switches between the two apertures in the CCD. The controller does not time or sequence an illumination unit nor control the CCD according to lighting sequences. Street only controls a shutter with the CCD, but is silent to controlling an illumination unit. The present application produces a

stereoscopic color image from a black and white image and does not have a goal of enhancing such an image by suppressing cross-talk, as is stated in Street. The coordination of the timing of the light valves alternating around beams of light is recited. The combination of the prior art, including Watanabe and Kitajima with Street does not achieve controlled timing and coordinated operation of the light valves, the sensor array, the multi wavelength illumination unit, all working together to arrive at the system of the present invention. Moreover, Applicants assert that Kitajima is art that teaches away from the present invention and that the combination of references is not obvious. As not all limitations of the claim are disclosed or suggested, as required by MPEP Section 2142, a *prima facie* case of obviousness has not been made.

Applicants assert that the use of hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art at the time of the invention. Applicants assert that as Kitajima operates in a substantially different way using substantially different technology, one of ordinary skill in the art would not look to Kitajima for use with a system such as disclosed in Street. Moreover, as Watanabe and Street are directed to solving different problems and do not show the coordination and control of all of the elements as recited in claim 1, the present invention would not be obvious to one of ordinary skill in the art based on Street and Watanabe. Applicants assert that as the prior art references teach away from combining to one of ordinary skill in the art at the time of the invention. After carefully considering their disclosures even if the references are combined, one would not arrive at the presently recited invention. Applicants therefore assert that claim 1 patentably distinguishes over the combination. Applicants request the rejection of claims 1-3, 6-7, 10-17 and 20-21 be withdrawn.

Claim 20

Claim 20 recites a method for detecting a stereoscopic image comprising providing light valves alternating between at least two apertures directed at an object and providing a controllable multi wavelength illumination unit producing the sequence of at least two separated illumination beams at different ranges and wavelengths. Claim 20 further recites controlling the operation of at least two apertures and the sequence of the separated illumination beams such

that for *each image*, only a single one of the apertures is in an open state and only one of the two illumination beams illuminates the detected scene. Claim 20 further recites providing a multi wavelength light sensor array detecting a plurality of frames, controlling the timing and operation of the light valves and coordinating the timing of the operation of the light valves with the operation of the multi wavelength light sensor array and with operation of the controllable multi wavelength illumination unit to detect the plurality of frames for a combination including a selected open one of the apertures and at least a selected one of the beams.

As discussed above with regard to claim 1, Applicants assert that Kitajima uses a completely different technology that does not rely on the control and timing of the opened and closed states of light valves and illumination units. Rather, Kitajima utilizes different types of light and different types of lighting sources and different types of sensors to detect the light. In addition, the method of claim 20 recites coordination and control of the timing of the various light sources and arrays as well as the light valves and the single separated beams of light. Street does not teach or suggest such a complete coordination and Watanabe does not teach or suggest such a coordination. Although the Office Action contends that it would be obvious to combine the references, one of ordinary skill in the art would not make the inventive leap forward to provide further control and coordination to achieve the color images of the present invention. As the prior art is not directed to this goal, Applicants assert that one of ordinary skill in the art would not look to the references or combine the references to achieve the method recited in claim 20. Applicant therefore asserts that a *prima facie* case of obviousness has not been made and requests that the rejection under 35 U.S.C. § 103 of claim 20 be withdrawn.

Claims 2 and 3

In the Office Action, the Examiner takes Official Notice that it is obvious to include two groups of sensor (sic) or a plurality of sensors so that each group of sensor (sic) can detect light in different wavelengths such as blue or red or green. Applicants respectfully traverse the rejection. As stated above, the prior art neither teaches nor suggests the combination of claim 1 and the coordination of the light valves, the multi wavelength light sensor array and the controllable multi wavelength illumination unit. The timing and operation of these various

components and systems are coordinated to achieve only a single one of the light valves in an open state and only one of the at least two separated alternating beams of light illuminating the detected scene. Moreover, the prior art does not teach or suggest further control needed for controlling multiple sensors for detecting light in a predetermined range of wavelengths. As Street does not control the illumination unit, the sensor arrays and the light valves in a coordinated manner, Applicants assert that the references do not further teach controlling the light valves, the multi wavelength illumination unit and a plurality of sensing light in a predetermined wavelength of a sensor array. Applicants assert that more than just utilizing sensors of different light colors is needed for the device recited in claims 2 and 3, including the features of independent claim 1. Applicants therefore assert that the Official Notice with regard to claims 2 and 3 is improper and requests that the rejection with regard to claims 2 and 3 under 35 U.S.C. § 103(a) be withdrawn.

Claims 6 and 7

The Office Action does not state that these features of Watanabe are to be combined with Street and Kitajima. As stated above, Applicants assert that Kitajima teaches away from the present invention and controls operation in a much different manner. Applicants assert that the control of the multi wavelength light source in association with the other controlled systems and their operation is neither shown nor suggested by the prior art as discussed above with regard to claim 1. Although the Office Action asserts that the light dispersion means are inherent in Watanabe, it is not enabling for a combination with the more complex additional coordinated systems of the present invention and that is not enabling for one of ordinary skill in the art. Applicants therefore assert that claim 6 patentably distinguishes over the combination. Moreover, claim 7 recites that the light illuminating unit produces two separated alternating beams of light, each said beams of light characterized as being in a different range of wavelengths. As discussed above, claim 1 recites controlling the various systems to achieve an enhanced color stereoscopic image. The coordination control with the alternating beams of light is neither shown nor suggested and the control and coordination of two separated alternating beams of light is neither shown nor suggested. The use of separated beams of light requires

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-3, 6-7, 10-17 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,075,555 to Street in view of U.S. Patent No. 5,812,187 to Watanabe and U.S. Patent No. 5,865,829 to Kitajima.

Claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,075,555 to Street in view of U.S. Patent No. 5,812,187 to Watanabe and further in view of U.S. Patent No. 4,605,009 to Pourcelot et al.

further control that is not shown or suggested by the references cited. Applicants therefore assert that the rejection under 35 U.S.C. § 103(a) with regard to claims 6 and 7 should be withdrawn.

Claim 21

In the Office Action, the Examiner takes Official Notice that it is conventionally well known for a conventional stereoscopic device to reconstruct a stereoscopic image from a sensor or camera, to comprise a plurality of frames as outputs, for display on the stereoscopic monitor. Applicants respectfully assert that the images created by the method of claim 20 are neither shown nor suggested by the reference or combination of references as discussed above. Moreover, coordinating the various devices and their operation for creating a stereoscopic image from a plurality of frames is neither shown nor suggested by the prior art. Applicants assert that the Official Notice taken does not enable one of ordinary skill in the art to practice the invention or combine the reconstruction with the new, novel and non-obvious features arriving at the enhanced images of the present invention. Applicants assert that the rejection of claim 21 is not proper and requests withdrawal of the rejection.

The Rejection of Claim 4 Under 35 U.S.C. § 103(a) as Being Unpatentable Over U.S. Patent No. 6,075,555 to Street and U.S. Patent No. 5,812,187 to Watanabe as Applied to Claim 1, and Further in view of U.S. Patent No. 4,605,009 to Pourcelot et al.

The Office Action asserts that the combination of Street and Watanabe does not disclose the multi wavelength illuminating unit surrounding the apertures. The Office Action asserts that Pourcelot teaches an endoscope comprising an illumination unit shown in Figures 2 and 19. Applicants assert that element 19 of Figure 2 is being referred to rather than Figure 19. The Office Action states that it would have been obvious to employ a stereoscopic device as taught by Street to incorporate the Pourcelot et al. illuminating unit so that the multi wavelength illuminating unit surrounds the apertures in order efficiently illuminate different range of wavelengths to a maximum level. Applicants respectfully disagree. Applicants assert that the device of claim 1 is patentable over the combination of Street, Watanabe and Kitajima. Applicants note that the rejection of claim 4 is silent with regard to the combination requiring

Kitajima. Applicants assert that claim 1 is patentably distinguishable over the combination of Street and Watanabe.

Moreover, Applicants assert that it is element 19 in claim 2 that is shown as a light source surrounding the apertures. Applicants note that the Pourcelot reference is not directed to creating the color stereoscopic image according to the present invention. Pourcelot is directed only to a light for guiding the probe for proper placement for improved ultrasonic echography. Applicants assert however that creating an ultrasound is a far different field than the stereoscopic endoscope of the present invention wherein stereoscopic color images are achieved. Moreover, Applicants assert that the Pourcelot reference teaches only an annular light but does not teach a multi wavelength illumination unit surrounding the aperture. Moreover, the purpose and object of Pourcelot is not to achieve the stereoscopic image by providing the light of a multi wavelength illumination unit.

The light unit of Pourcelot et al. is used only to provide illumination so that the probe may be appropriately placed for creating the ultrasonic images. Moreover, even when combined, the combination does not arrive at a multi wavelength illumination unit or how to configure such a unit so that it surrounds the apertures. The complexity for a simple light source in an annular configuration may be known to one of skill in the art. Applicants assert that the complexity for achieving *a multi wavelength illumination unit that surrounds the apertures* in such a stereoscopic endoscope is beyond the level of skill of one of ordinary skill in the art. Applicants therefore assert that the rejection of claim 4 under 35 U.S.C. § 103(a) is improper. Applicants respectfully request that the rejection be withdrawn.

Applicant respectfully asserts that the claims patentably distinguish over the cited references and respectfully requests withdrawal of all rejections.

VIII. CLAIMS APPENDIX

1. (Previously Presented) Stereoscopic device comprising:

at least two apertures, each of said apertures including a light valve, each of said light valves being operative to open at a different predetermined timing;

a multi wavelength light sensor array, and

a controllable multi wavelength illumination unit illuminating a scene, said controllable multi wavelength illumination unit producing at least two separated alternating beams of light, each said beams of light characterized as being in a different range of wavelengths,

a controller connected to said light valves, said multi wavelength light sensor array, and to said controllable multi wavelength illumination unit, said controller coordinating the timing and the operation of said light valves, with said controllable multi wavelength illumination unit, and with said multi wavelength light sensor array, to detect a plurality of images, so that for each of said plurality of images, only a single one of said light valves exhibits an open state and only one of said at least two separated alternating beams of light illuminates the detected scene.

2. (Original) The stereoscopic device according to claim 1, wherein said multi wavelength light sensor array includes at least two groups of sensors, where the sensors of each said group detect light in a different range of wavelengths.

3. (Original) The stereoscopic device according to claim 1, wherein said multi-wavelength light sensor array includes a plurality of sensors, each said sensors detecting light in a predetermined range of wavelengths.

4. (Original) The stereoscopic device according to claim 1, wherein said controllable multi wavelength illumination unit surrounds said apertures.

5. (Cancelled)

6. (Original) The stereoscopic device according to claim 1, wherein said controllable multi wavelength illumination unit comprises:

a multi wavelength light source;

a light dispersing unit; and

light guiding means connected between said multi wavelength light sources and said light dispersing unit, thereby guiding light from said multi wavelength light source to said light dispersing unit.

7. (Previously Presented) The stereoscopic device according to claim 6, wherein said light illuminating unit produces at least two separated alternating beams of light, each said beams of light characterized as being in a different range of wavelengths.

8-9. (Cancelled)

10. (Original) The stereoscopic device according to claim 1, further comprising capture means, connected to said multi wavelength light sensor array, for capturing data received from said multi wavelength light sensor array.

11. (Original) The stereoscopic device according to claim 10, further comprising a storage unit for storing said captured data.

12. (Previously Presented) The stereoscopic device according to claim 1, further comprising a stereoscopic display unit, connected to said controller, for producing said images.

13. (Original) The stereoscopic device according to claim 1, wherein each said different ranges of wavelengths associated with said multi wavelength illumination unit, is selected from the list consisting of:

substantially visible red color light;

substantially visible green color light;

substantially visible blue color light;

substantially visible cyan color light;

substantially visible yellow color light;

substantially visible magenta color light;

substantially visible infra-red color light;

substantially visible color light; and

visible light.

14. (Original) The stereoscopic device according to claim 2, wherein each said different ranges of wavelengths, associated with said sensors, is selected from the list consisting of:

substantially visible red color light;

substantially visible green color light;

substantially visible blue color light;

substantially visible cyan color light;

substantially visible yellow color light;

substantially visible magenta color light;

substantially visible infra-red color light;

substantially visible color light; and

visible light.

15. (Original) The stereoscopic device according to claim 1, wherein said multi wavelength light sensor array is a color red-green-blue (RGB) sensor array.

16. (Original) The stereoscopic device according to claim 1, wherein said multi wavelength light sensor array is a color cyan-yellow-magenta-green (CYMG) sensor array.

17. (Original) The stereoscopic device according to claim 1, further comprising an image processing system connected to said multi wavelength light sensor array and to said controllable multi wavelength illumination unit.

18-19. (Cancelled)

20. (Previously Presented) Method for detecting a stereoscopic image comprising the steps of:

providing light valves alternating between at least two apertures, directed at an object;

providing a controllable multi wavelength illumination unit producing a sequence of at least two separated illumination beams, at different ranges of wavelengths;

controlling the operation of said at least two apertures and the sequence of said at least two separated illumination beams, such that for each said image, only a single one of said apertures exhibits an open state and only one of said at least two illumination beams illuminates the detected scene;

providing a multi wavelength light sensor array detecting a plurality of frames, controlling the timing of the operation of said light valves, and coordinating the timing of the operation of said light valves with operation of said multi wavelength light sensor array and with operation of said controllable multi wavelength illumination unit to detect the plurality of frames for a combination including a selected open one of said apertures and at least a selected illuminating one of said beams.

21. (Original) The method of claim 20, further comprising the step of reconstructing a stereoscopic image from said frames.

IX. EVIDENCE APPENDIX

A. OFFICE ACTIONS AND AMENDMENTS/RESPONSES

1. Final Office Action -- mailed May 2, 2005

4. Amendment -- mailed December 9, 2004

5. Office Action -- mailed June 9, 2004

B. REFERENCES RELIED UPON BY THE EXAMINER

1. U.S. Patent No. 6,075,555 to Street

2. U.S. Patent No. 5,865,187 to Katajima

3. U.S. Patent No, 5,812,187 to Watanabe

4. U.S. Patent No. 4,605,009 to Pourcelot

C. REFERENCES CITED BY APPELLANTS

None

D. CASES CITED IN THE BRIEF

None

X. RELATED PROCEEDINGS APPENDIX

None.

XI. SUMMARY

It is earnestly requested that the Examiner's rejection be reversed, and that all of the pending claims be allowed.

Please charge any additional fees or credit overpayment to Merchant & Gould Deposit Account No. 13-2725.

Respectfully submitted,

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P.O. Box 2903
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Date: 5/1/06

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GAS/krn